

**Notice of Allowability**

Application No.

10/064,408

Examiner

Julian Mercado

Applicant(s)

ROY ET AL.

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 3-4-05.
2. ☒ The allowed claim(s) is/are 1-22 and 24-35.
3. ☒ The drawings filed on 10 July 2002 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

## **DETAILED ACTION**

### ***Remarks***

This Office action is responsive to applicant's amendment filed March 4, 2005.

Claims 23 and 25 have been canceled.

### ***Claim Objections***

The objection to claim 26 has been withdrawn.

### ***Claim Rejections - 35 USC § 112***

The rejection of claims 1-22, 24, 26 and 27 has been withdrawn.

### ***Claim Rejections - 35 USC § 102 and 103***

The rejection of claims 28-31 and 35 under 35 U.S.C. 102(b) or 35 U.S.C. 103(a) based on Deublein et al. (Hydrogen-Conducting Electrolyte Configurations, Solid State Ionics 28-30 (1988), pp. 1084-1088) has been withdrawn.

The rejection of claims 1-3, 9-23, 25, 27 and 32-34 under 35 U.S.C. 103(a) based on Deublein et al. and Kaun et al. has been withdrawn.

The rejection of claims 4-7 under 35 U.S.C. 103(a) based on Deublein et al., Kaun et al., and Hatoh et al. (U.S. Pat. 5,354,627) has been withdrawn.

The rejection of claim 8 under 35 U.S.C. 103(a) based on Deublein et al., Kaun et al., and Fellows (U.S. Pat. 6,071,634) has been withdrawn.

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The rejection of claims 24 and 26 under 35 U.S.C. 103(a) based on Deublein et al., Kaun et al., and Aoyama (U.S. Pat. 5,616,430) has been withdrawn.

***Allowable Subject Matter***

Claims 1-22, 24 and 26-35 are allowed.

The following is an examiner's statement of reasons for allowance: the prior art of record does not teach or suggest the claimed invention regarding a fuel cell having a source of hydride ions in fluid communication with the cathode.

The examiner notes applicant's amendment to the claims reciting that the hydride ions react with oxygen (in fluid communication with the anode) to produce water and free electrons. To the extent that this limitation may further limit the claims, attention was drawn to the hydride ions in fluid communication with the cathode, which is then transported across the electrolyte (having a hydride ion conductance) to react with oxygen on the anode side, thereby forming water.

Upon further consideration, while Deublein teaches the disclosed electrochemical cell as having a configuration to act as a fuel cell (page 2, 1<sup>st</sup> full paragraph), the reference does not disclose a source of oxygen in fluid communication with the anode. Instead, Deublein appears to suggest a chemical potential, i.e. Gibbs free energy exchange, in order to produce a voltage from such a fuel cell.

The examiner also notes that applicant's claimed fuel in fluid communication with the cathode and oxygen in fluid communication with the anode is opposite the conventional

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arrangement of the fuel and oxidant gas being directed to the anode and cathode, respectively.

See, for example, U.S. Pat. 3,953,237 to Epstein et al.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian Mercado whose telephone number is (571) 272-1289. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

A handwritten signature, possibly reading "jam", enclosed within a large, loopy oval.A small, stylized handwritten signature.

**PATRICK JOSEPH BMA**  
**SUPERVISORY PATENT EXAMINER**